DOCUMENT RESUME

ED 218 244 SP 020 369

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TITLE Developing Inquiry Skills in Teachers: Some Reflections on Improvement of Practice.
PUB DATE Mar 82
NOTE 24p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, March 22, 1982).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Educational Research; Elementary Education; *Inquiry; *Inservice Teacher Education; Observation; Problem Solving; Program Development; *Research Utilization; School Organization; *Skill Development; Teacher Attitudes; Teaching Skills; *Team Teaching; Teamwork

ABSTRACT

The reflections of two social scientists regarding an inservice education program for elementary school teachers were the basis of their approach to inservice programs: Teachers need to have analytical and inquiry skills that will allow them to read research reports and listen to inservice presentations, digest the information, and then apply what seems useful to them in their particular situations. When an elementary school was about to undergo a transition from a traditional, self-contained classroom structure to an open-concept school, where teachers worked in teams, a summer workshop was developed to teach needed analytical and inquiry skills to teachers. The development of certain skills would benefit the teachers: (1) journal keeping; (2) ability to reflect on one's own performance; and (3) an ability to observe the actions of others and gain understanding of those actions from the perspective of the participants. A 2-week workshop was designed and implemented through day-by-day schedules. While the participants at first had difficulty in accepting the concept that development of inquiry skills would be valuable in a team-teaching situation, the master plan of the workshop eventually became apparent to them. Follow-up studies in the fall, however, revealed that, because of the organizational structure of the school and lack of time, teachers had little opportunity to utilize all the skills they had learned. The inservice workshop was successful in changing some teachers' beliefs about teaching. However, it was not successful in that it did not deal with the problems faced by the teacher in implementing these changes, given the constraints imposed by the ways schools are organized. (JD)

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DEVELOPING INQUIRY SKILLS IN TEACHERS:

Some Reflections on Improvement of Practice

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Paper presented at the Annual Meeting of the American Educational Research Association, New York, March 22, 1982.

We would like to thank Eileen Raffaniello and Betty Van Wagener for their help in designing and executing the inservice workshop described in this paper. We would like to acknowledge the support of the Ohio Department of Education for funding the workshop. The ideas and opinions expressed in this paper are strictly those of the authors.

SP 020 369

This paper presents the reflections of two social scientists regarding an inservice education program for elementary school teachers. We approach this task as outsiders in the world of teacher education. Neither of us has had formal training in teacher education, and between us, we have one year of teaching experience in public schools. Our advanced training is in education, but most of our experience in classrooms has been as observers and researchers.

We teach in a college of education because we believe that the issues we study and the findings we obtain should have some practical consequences. We are very much concerned with how best to apply the findings of our research. Our training and experience have been in doing basic research, not on how best to communicate our findings to teachers or how to translate our findings into prescriptions that can be introduced into teacher training curricula. We agree with Fenstermacher's (1978) criticisms of teacher educators' tendencies to convert basic research findings into rules that teachers can apply uncritically in their classrooms. We advocate the skeptical consumption of research findings by teachers. In order to be able to translate research findings into practice for their own classrooms, teachers need to have analytical and inquiry skills that will allow them to read research reports and listen to inservice presentations, digest the information, and then apply what seems useful to them in their particular situations. In addition, teachers need these inquiry skills in order to find out what is actually happening in their own classrooms, regardless of what is said in the research literature or in inservice presentations.

Our beliefs are not based solely on abstract theoretical notions. Our training is in education psychology (Yinger) and in anthropology

and education (Shultz). Between the two of us, we have over fifteen years of experience teaching and talking with teachers. Both of us have spent our professional careers doing field research in school settings. Shultz has spent the last ten years doing research on the social organization of interaction in school and home settings. This research, which has been almost entirely ethnographic, has focused on trying to describe and make sense of teachers' and students' understandings of classroom life. Yinger has spent the last six years studying teacher thinking, and specifically, teacher planning processes in naturalistic settings. Both of us have developed from these experiences in schools and classrooms notions about teaching that rely heavily on viewing the teacher as a professional functioning in a very complex social and psychological environment.

We wanted to state our beliefs and assumptions at the outset because we will be writing about an inservice workshop we did for teachers this past summer - a workshop dealing with what we call "inquiry skills". We knew we were in for a challenging experience when one of the first questions we were asked in the workshop was: Have you ever been classroom teachers? We had to answer honestly that we (except for the one year by one of us mentioned earlier) have not been. Our qualifications were called into question, based not on our training or knowledge, but on our work experience. This was a familiar theme to us; we are occasionally criticized by our teacher education colleagues for not knowing about what goes on in schools.

We made it clear to the teacher participants that we were not there to teach them specific skills like how to work with special kinds of children, how to implement a new curriculum, or how to use

the "ten best rules for discipline." We tried to make it clear that we were there to help them find these things out for themselves by providing them with some of the skills that we thought were necessary to be reflective and effective professionals.

To some extent, we succeeded. What at first was a somewhat hostile audience (as evidenced by the first question we were asked) was, at the end of the two week summer workshop, an attentive and appreciative one. It is our version of this story and our reflections on it that constitute the subject matter for this paper.

How did we get involved in inservice education to begin with?

Most of the courses we teach in the College of Education are what are known as "service" courses: classes for classroom teachers who have returned to school to obtain a masters degree in some area (special education, curriculum and instruction, business education, etc.) or to obtain additional credits in order to qualify for a higher salary. As such we come in contact with many classroom teachers through our ordinary duties as faculty members.

In our classes, we deal with issues related to cultural differences, instructional theory, sociolinguistics, and cognitive psychology. We have heard from many of our students that the subject matter of our courses was never covered (or only peripherally so) in their undergraduate teacher training programs and that we had a great deal to offer, not related to specific curricula or instructional methods, but rather related to ways of thinking about children, about learning, and about teaching. We believe the key phrase here is "ways of thinking about." We were stimulating and challenging teachers to think about what they were doing in ways that they possibly had not done before.

We would also overhear teachers complaining about the irrelevancy of inservice education programs. Or we would be asked directly if we could do an inservice education program for teachers at their schools. In the summer of 1981, with the availability of state funds for summer institutes for teachers, we decided to take the plunge into inservice education. As we said earlier, this move was spurred by a (maybe) naive belief that we had something to offer and that we in fact knew some things that we thought teachers should know.

The Workshop

We originally conceived of the idea of conducting such a workshop in a series of conversations with Dr. Eileen Raffaniello of the school psychology program. She had been talking to the principal of an elementary school in Cincinnati which had recently undergone a transition from a traditional self-contained classroom structure to an open-concept school, where teachers worked in teams in large, open areas. The principal was concerned about the ability of his teachers to go from a situation where they worked independently to one where they were to work in teams. He feared that many years of teaching in a self-contained classroom would prove to be an impediment to working closely with other teachers in planning curricula and in working out compatible instructional approaches.

In these preliminary conversations, we realized that we each had some skills, derived from our training, that would be beneficial to teachers (and others) who were working together. These skills were: journal keeping (Yinger), i.e., the ability to reflect on one's own performance; ethnographic observation (Shultz), i.e., the ability to observe the actions of others and attempt to gain an understanding of those actions from the perspective of the participants; and

collaborative consultation and problem-solving (Raffaniello), i.e., the ability to work and communicate effectively with others in dealing with problems of mutual concern. These conversations made it clear (to us at least) that these were skills that were useful not only for conducting research and for use by outside consultants, but would also be useful for practitioners in dealing with the problems they confront in their everyday work lives.

Based on these conversations, we decided to submit a proposal to the State of Ohio to conduct a summer institute for teachers dealing precisely with the three areas mentioned earlier - journal keeping, observation, and collaborative problem solving - which we came to call "inquiry skills." We planned for the summer institute, which was to be done for the staff at the school undergoing the transition, to include two different kinds of experiences for practitioners: lecture and class discussion dealing with theoretical and methodological issues related to the three skills; and a concurrent simulation exercise, during which the participants could try out some of the new skills they were learning.[1]

As originally conceived, each one of us - Yinger, Shultz, and Raffaniello - would be responsible for teaching about the skill we

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[1] In the simulation, one third of the participants in the workshop were to act out the part of a teacher who was having management problems in his classroom. The other two thirds of the participants were to pretend being other teachers in the same school who were to work as consultants in teams of two with one of the "teachers" in, first, identifying the problem the teacher was having, and second, formulating potential solutions for the problems the teacher was facing. Material for the simulation was to be drawn from videotapes made in an actual classroom in which a white male primary school teacher was having problems in his first year working with native American children.

were most familiar with and that as a team, we would lead them through the simulation. We anticipated an enrollment of approximately 25 students, giving a student/teacher ratio of approximately 8:1. The institute was approved for funding in the spring of 1981, and, after consultation with the school, was scheduled to be held in August of the same year.

As with all well laid plans, several modifications had to be made to the original proposal. First of all, Dr. Raffaniello changed jobs in July, and she was replaced on the team by Betty Van Wagener, a doctoral student in the school psychology program who was proficient in the theory and method of collaborative consultation and problem solving, and who had conducted workshops on that topic in the past. She, like us, had had no public school teaching experience, although she had worked for two years as a school psychologist.

Second, although the principal was supportive of the institute and there was a perceived need on the part of the teachers at the school for such a workshop, the month of August did not turn out to be the best time for all concerned. As such, only ten to twelve teachers at the school made a commitment to attend, and in order to maintain the funding from the state and to make it worthwhile for all involved, we had to look elsewhere for other teachers who were in a similar team situation and who could benefit from such a workshop. In the end, eight teachers were recruited from an intermediate school (grades 4-6) in the Cincinnati system, and an additional two teachers were recruited from a suburban middle school. All three were open-concept schools where many of the teachers worked in instructional teams.

The institute was scheduled for the middle two weeks in August with meetings scheduled from 9:00 A.M. to 3:00 P.M., with a one-hour break for lunch. A day-by-day schedule of activities for the institute is contained in Figure 1.

Reflections on Workshop

The preceding description of and schedule for the workshop paints a picture of an orderly, coherent activity. In reality, as anyone who has conducted such a workshop knows, there was a great deal of fumbling, trial and error, and confusion associated with the workshop (as well as some good times, interesting presentations, and stimulating discussions). In this section, we will present our impressions of the workshop. We will also present the impressions of the participants, based on the written evaluations they turned in during the workshop and on our conversations with the teachers in the follow-up sessions.

The first question we were asked after we provided a brief introduction to the workshop - did any of the three workshop instructors have any public school teaching experience? - confirmed what we already felt: teachers have a general distrust of inservice programs, particularly those conducted by university faculty members. This is especially true when the faculty members are barely wet behind the ears and appeared to be younger than many of the workshop participants. One way of paraphrasing this question is: What do you young, inexperienced university people know about what happens in schools and what can you tell us about teaching that we already don't know? After a bit of hemming and hawing, we tried to answer both the explicit and implicit questions: we have had little public school teaching experience (one

Figure 1: Day-by-Day schedule for workshop

Week 1	Morning Session	Afternoon Session
Day 1	a. Introduction of participants	a. Presentation: journal keeping - description and rationale
	b. Goals and objectives of the workshop	b. Journal keeping exercise: systematic reflection
Day 2	a. Beginning of simulation exercises: 1) meet with participants identified as "teachers";2) show them videotapes of actual teacher interacting with students; 3) present them with background information regarding the community, the school, and the students; and 4) as a group, formulate what it is that the "teacher" is having problems with.	a. Continuation of simulation exercise: 1) teams of one "teacher" and two "consultants" meet for the first time; 2) "teacher" shares problem with consultant; 3) "consultants" may ask clarifying questions; 4) each participant completes a systematic reflection exercise on the interaction (s)he has just participated in; 5) groundrules elaborated regarding interaction among "team" members.
	b. Discussion and processing of systematic reflection exercises	
	c. Presentation and activity; using journal keeping for planning and collaboration.	
Day 3	a. Introduction to observation: meet at downtown location and observe interaction (no explicit directions given except to observe any persons interacting with each other and to take notes on what is observed).	a. Presentation: theoretical and methodological issues in doing observation.
Day 4	a. Continuation of simulation: 1) All participants view videotapes of teacher who is having problems; 2) All do systematic reflection writing exercise (individually); 3) Consultants meet in teams to discuss their observations; 4) Teachers meet as a group to further refine and define the problem; 5) Videotapes shown to whole group of other teachers in same school interacting successfully with students; 6) Individual reflection exercise on observation of second teacher.	a. Evaluation of first week
Day 5	No class meeting: time to do reading assignment dealing with collaborative problem solving for following week.	

Figure 1 (continued)

Week 2

Day 6	a. Presentation: Introduction to Collaborative Consultation b. Communication skills exercise c. Discussion of processing of communication skills exercise	a. Presentation: Theoretical and Methodological issues in doing collaborative consultation
Day 7	a. Videotape demonstration of collaborative consultation b. Collaborative consultation exercise: problem identification	a. Discussion of collaborative consultation exercise b. Group consultation
Day 8	a. Continuation of simulation exercise 1) Consultants meet in teams (without teacher to formulate consultation strategy) 2) Participants meet in complete teams (teacher and two consultants) for collaborative problem solving 3) General discussion among all participants and workshop instructors regarding simulation	a. Discussion of follow-up activities for workshop b. Formulation of problems teachers at each of the three schools would like to tackle using skills acquired in workshop
Day 9	All day: evaluation of second week and workshop as a whole and discussion of how these skills can be used in everyday work of participants.	
Day 10	No meeting. Further reflection of merits of workshop and utility of skills.	

year among the three of us) although we have had over ten years of combined teaching in a university and we weren't there to tell them how to teach better. We only hoped that the skills we were presenting could be used in helping them with everyday problems. All we planned to do was to provide them with skills; they would have to decide how best they could be applied.

This first question, in addition to providing some measure of distrust of outsiders, also pointed out that there had been some miscommunication regarding the purpose and expected outcomes of the workshop. From some source, perhaps even from one or another of us, the participants in the workshop had been led to believe that we were going to tell them what to do in order to work better in teams. The differences in expectations between participants and instructors began to become clear: we thought that we were there to teach the participants some skills and we expected them to make the connections between what we were saying and better team-work. The participants expected that we were going to provide them with some ready-made solutions for how to work better in teams.

In attempting to understand why the difference in expectations occurred, we see two potential sources of confusion. The first has to do with the ways in which the teachers found out about the workshop. There were at least two sources of information: the principals at the two Cincinnati schools had copies of the proposal for the workshop to share with interested teachers; and we made brief presentations at faculty meetings at both schools.[2] It became clear

[2]The two teachers from the suburban middle school were recruited through one of our classes, and they had a better understanding of what the workshop was about.

that we had not done a good job of communicating with either the teachers themselves or with the principals regarding the purpose of the workshop. This was the first place where our inexperience in doing inservice workshops created a problem.

The second potential source of confusion also has to do with our naivete regarding inservice education. One of the things that we didn't realize (or at least didn't realize the extent of) was that teachers were accustomed in inservice workshops to be infused with"knowledge".[3] In some ways, by rejecting the traditional notion of what an inservice workshop is supposed to be, we created some problems. We were not prepared to make the connections between what we were saying and what the teachers should be doing. But even more than that, we did not believe that we were in any position to make those connections for them. Only they, as the true experts regarding what happens in their classrooms and in their schools, are equipped to deal with the issues related to application.

This was not a cop out. We were not going to shy away from discussing the issue of application of these skills to their particular situations. As a matter of fact, referring to Figure 1, time had been set aside in both days 8 and 9 of the workshop to discuss these very issues. But we were merely going to act as facilitators and discussion leaders. We were not going to play the role of expert and tell them what it was we thought they should do. From our perspective, this was not an appropriate role for us to play.

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[3]Toni Sharma, a teacher in Columbus, Ohio, compares this process to the artificial insemination of a cow in an article in the Phi Delta Kappan, February, 1982.

After receiving assurances from the participants that they would withhold judgment regarding the purpose of the workshop until we had had a chance to present some of the material, we proceeded with the presentation on journal keeping. During the following three days, we presented material on journal keeping and observation, including a number of exercises which the participants could do to try their hands at using these skills. In addition, during days two and four, the participants engaged in the simulation of work in teams where two of them helped a third participant with a "problem". This was a second source of hands-on experience using the observation and journal keeping skills we had presented.

The first week ended with an evaluation session that included both verbal and written assessments of the workshop by the participants. In both the written and verbal evaluations, a number of prominent themes emerged. The first had to do with the physical and temporal arrangements. The airconditioning did not work properly in the part of the building where the resource room was located and the air was often hot and stuffy. The chairs we used were not very comfortable, and sitting in them for as many hours as we did (up to six on any given day) was not conducive to paying attention. Finally, the length of time involved was perceived as being overwhelming. For that reason, we cancelled the last day's meeting on the first week to allow participants to recover and to give them time to do some of the reading for the collaborative consultation sessions that were to take place the following week.

The second set of themes that emerged in the evaluation was more substantive. Participants enjoyed the hands-on experiences they were getting. On the other hand, they felt that much of the lecturing we

had done on journal keeping and observation was superfluous. They also were having trouble seeing the connections between the two skills. These latter two criticisms seemed to us to be related to each other. As long as they viewed the two kinds of skills as being unrelated, all they were interested in learning was how to do them. The reasons why they should be done that way did not seem very relevant. Since the lectures were related to the theoretical and research based underpinnings of the methods, and because we were emphasizing the ways in which the methods complemented each other, we were looking at the workshop as a whole. The participants, on the other hand, because they did not yet have a sense of the whole, particularly in light of the initial misunderstanding regarding objectives, continued to view each of the units discretely. After obtaining a second set of assurances from the teachers that they would withhold judgment until the end of the workshop, the first week ended.

In conversations among the three instructors, doubts began to crop up regarding our initial assumptions about the workshop. That is, even though the three of us believed that the three skills we were presenting complemented each other, and that all of them were necessary for effective teamwork to occur, we began to have some doubts about whether or not we could communicate that to others. And even though we believed that we were not the experts and that our job was to present material to the teachers to absorb and apply as they thought best, we feared that the teachers' expectations for more traditional inservice education may have been a stumbling block in our attempts at helping teachers improve their professional practice. In other words, after one week of doing inservice education, our naivete,

ignorance and enthusiasm began to fade, to be replaced by pessimism and skepticism.

On this note, the second week of the workshop began. Partly due to Betty Van Wagener's presentation skills and partly due to the continuation of the simulation and other exercises, we began to notice a change in the participants shortly after the start of the second week. It seemed as though talking about how people should communicate and solve problems together put the other skills into perspective. It began to become apparent to the teachers that in order to work together, it was necessary to have skills that would allow them to observe their own behavior and the behavior of others, to reflect on that behavior, and to communicate their observations and reflections to each other. In other words, the master plan for the workshop began to become apparent to the participants as well as to the instructors.

By the end of the second week, what had started as tentative acceptance and approval during the first days ended in an overwhelming show of support for the workshop by the time of the last day's written and verbal evaluations. Aside from the complaints regarding physical accomodations and time, the participants were almost unanimous in their approval of the goals of the workshop. There were comments made about how they could now see the relevance of the lectures of the first week and how what had originally seemed to be three separate sets of skills now fit together into a coherent whole. This enthusiasm for the material presented in the workshop was evident in the small group meetings the participants had by school, where they made plans for using these skills to tackle a problem they anticipated at their school during the coming year. After making plans to meet

each of the groups of teachers at their school for a follow-up session during the coming two months, the workshop ended.

Follow-up sessions

The original plan included five follow-up sessions: one session at each of the three schools during early October, followed by a session in each of the two Cincinnati schools in January. Due to scheduling problems, both at the schools and at the University, the first follow-up sessions were held between November 10 and November 24.

The meetings at the three different schools proceeded in very much the same fashion. Teachers talked about the importance of observing children in their own classrooms and spoke of how the observational skills they had learned had helped them defer judgment on students until they had gathered sufficient information on what the child could and could not do.

On the other hand, the other two skills - journal keeping and collaborative problem solving - were not viewed as useful because of time constraints placed on them by their jobs. The two teachers at the suburban school were embarassed to report that they had not had any time to write in their journals and other teachers reported that they had used the journals but only sparingly. More significantly, the teachers complained about not having time to work collaboratively, either to observe in each other's classrooms or to sit down and solve problems together. Their own teaching and administrative loads made work with others nearly impossible.

This last point - related to collaborative work - came somewhat as a surprise to us. Even though we knew about the overwhelming schedules of teachers and the little free time they had to work on anything except their assigned tasks, we felt that since we were

dealing with teachers who were working in schools where the team concept was not only accepted but was rather the norm, that the teachers would be able to find time to work together at some point during the week. This was the place where our inexperience with the everyday lives of teachers had its most significant impact. Our naivete in this regard led us to make certain assumptions about the material we presented and its utility for classroom teachers. During these initial follow-up sessions, we learned the hard way that although we feel that certain skills are important for teachers the institutional and bureaucratic constraints under which teachers operate make it virtually impossible for our ideas to be placed into practice. Without some radical changes in teachers' work schedules, knowledge about how to reflect on your own work, on how to observe the actions of others, and on how to work together would, for the most part, go for nought. Based on these initial meetings, the second set of follow-up sessions was cancelled.

That is not to say that the skills we gave the teachers were totally useless. For one thing, we don't know what the long term effects of the workshop will be. In the short run, it was apparent that some of the observational skills proved to be useful for teachers in their own classrooms (as opposed to their utility in observing someone else's classroom) and that for those teachers who used their journals, however sparingly, they too proved to be an asset in reflecting on their own teaching.

Discussion and Conclusions

This paper has been a personal account of our delving into the area of teacher in-service education. The basic issue we are dealing with is the sticky question of translating research into practice. To deal with this question, we have ventured from our roles as researchers to that of educators.

We have both been influenced by other educators who approach the area of inservice education from non-traditional viewpoints. We concur with this "new" thinking that the improvement of practice is best based on developing the professional skills of teaching, (e.g., decision making, problem solving, inquiry, planning) instead of focusing on specific teaching skills or methods. Jackson (Note 1) conveys this orientation with its emphasis on teachers' abilities to customize strategies and methods for their own teaching situations when he states:

> Customarily, we speak of putting theory into practice. But that is not what we do at all. We put theory, or whatever you want to call the ideas we transmit, into practitioners, where it may serve a wide variety of functions, only one of which is the actual guidance of their actions (p. 36).

Fenstermacher (1978) has developed the most thorough rationale for this viewpoint. He bases his argument on Thomas Green's conceptual change definition of education.

> Green (1971) has contended that the purpose of teaching is to lead students from what is subjectively reasonable for them to believe to what is objectively reasonable for them to believe. That is, a student comes to school with a certain set of beliefs that, given his or her experiences, seem plausible (subjectively reasonable) to him or her. But if the weight of established evidence available to humankind is brought to bear on these subjectively reasonable beliefs, it can be shown that some, many, or perhaps all of these

> beliefs are not reasonable in an objective sense. Education, for Green, is largely a matter of transforming a person's subjectively reasonable beliefs to objectively reasonable beliefs (p. 167).

Fenstermacher argues that "the transformation from subjective reasonableness to objective reasonableness is undertaken by developing the student's capacity to reason and by presenting evidence for or against subjectively reasonable beliefs" (p. 167). From this standpoint, he proposes that education (and in this case teacher education) will be most effective when it focuses on presenting teachers with evidence of effective practice that may be used to examine one's own beliefs about teaching. He criticizes the large body of teacher effectiveness research for its tendency to take correlational findings and to convert them into rulebound procedures for teachers. In contrast to this "conversion schema" for translating research into practice, Fenstermacher offers a "transformation schema" where "the results of the researcher's inquiry are used as evidence, as information, as sources of insight for teachers to consider along with their own experiences" (p. 175).

As an alternative to providing teachers with rules and prescriptions as a means to improving practice, Fenstermacher advocates the presentation of evidence. To this, we would also add the importance of providing teachers with new conceptions of practice and with new ways of thinking about and conducting their professional responsibilities. The emphasis here is on changing beliefs about practice, rather than ways of improving practice per se.

Peters (1977) has written along a similar tack, emphasizing a view of the teacher as a self-directed, critical, experimental person. He advocates the presentation of educational theories as a

means to sensitizing the teacher to new ways of seeing students and teaching. This viewpoint has been recently supported by the writing of Tom (Note 2) and the research of Berlack and Berlack (1981) that emphasize the use of educational theory and knowledge as a source of insight and enlightenment rather than a source of specific rules or general prescriptions. Clark and Yinger (Note 3) used a similar rationale in their application of recent research on teacher planning to teacher education.

As we alluded to in our discussion of the Institute and the follow-up activities, the crucial issue in improving practice is not only the holding of certain beliefs (though this is a necessary first step) but also being able to act upon them. As Fenstermacher anticipated, "what seems objectively reasonable in the abstract can become debilitating and destructive in the concreteness of social systems like schools" (p. 181). In our case, we found this to be especially true of the inquiry skills we taught the teachers. The final evaluations and discussions with the teachers strongly suggested that certain beliefs about teaching had been changed. The follow-up visits indicated that it was difficult for most teachers to act upon these new beliefs.

How can this problem be dealt with? If the social and institutional constraints of schools prevent or preclude teachers from functioning in objectively reasonable ways, what should be the response of teacher educators? Should we encourage an approach to inservice education that emphasizes the teacher's role as a professional capable of being reflective and making decisions? If we accept this approach, are we stuck with the dilemma of providing teachers with conceptions and skills that will only be frustrated

when they try to implement them?

Obviously, there is no simple solution to this problem. We see two means to begin dealing with these issues. First, we think that teacher educators should continue to reevaluate what the essence of professional practice is and what kinds of ways professional development opportunities can be provided for teachers. We have cast our vote for viewing teachers as professionals and for the importance of providing evidence and new conceptions of practice. We would therefore advocate in-service efforts like the one described here with an added emphasis on working closely with the teachers to see how their new beliefs might be brought to bear in practice.

Second, we join Fenstermacher in his call for studying more closely how teachers' beliefs are formed and especially the roles that schools play in this phenomenon. What is needed are more descriptive studies of teachers' conceptions of teaching and schooling like those of Bussis, Chittenden and Amarel (1976), Eddy (1969), Marland (Note 4), and Munby (Note 5). Also we need to more closely examine how beginning teachers form their beliefs about teaching in the course of pre-service education. Descriptive studies of this type are being initiated (e.g., Robbins, Note 6; Hill and Yinger, Note 7), but we need more research along these lines.

In summary, we feel that the inservice workshop we presented was successful in that it did change teachers' beliefs about teaching. However, it was not successful in that we did not deal with how teachers were to implement these changes given the constraints imposed by the ways schools are organized. Even though our naivete regarding the ways in which schools operate lessened the impact of the workshop, we still believe that our initial assumptions regarding what teachers should know and be able to do are right.

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